Malaysia: WHO and UNICEF estimates of immunization coverage: 2022 revision

BCG, DTP1, DTP3, Pol3, MCV1, HepB3, Hib3, RotaC, PcV3

No estimate for infant immunization made.

BACKGROUND NOTE: Each year WHO and UNICEF jointly review reports submitted by Member States regarding national immunization coverage, finalized survey reports as well as data from the published and grey literature. Based on these data, with due consideration to potential biases and the views of local experts, WHO and UNICEF attempt to distinguish between situations where the available empirical data accurately reflect immunization system performance and those where the data are likely to be compromised and present a misleading view of immunization coverage while jointly estimating the most likely coverage levels for each country.

WHO and UNICEF estimates are country-specific; that is to say, each country's data are reviewed individually, and data are not borrowed from other countries in the absence of data. Estimates are not based on ad hoc adjustments to reported data; in some instances empirical data are available from a single source, usually the nationally reported coverage data. In cases where no data are available for a given country/vaccine/year combination, data are considered from earlier and later years and interpolated to estimate coverage for the missing year(s). In cases where data sources are mixed and show large variation, an attempt is made to identify the most likely estimate with consideration of the possible biases in available data. For methods see:

*Burton et al. 2009. WHO and UNICEF estimates of national infant immunization coverage: methods and processes.
*Burton et al. 2012. A formal representation of the WHO and UNICEF estimates of national immunization coverage: a computational logic approach.
*Brown et al. 2013. An introduction to the grade of confidence used to characterize uncertainty around the WHO and UNICEF estimates of national immunization coverage.

DATA SOURCES.

ADMINISTRATIVE coverage: Reported by national authorities and based on aggregated administrative reports from health service providers on the number of vaccinations administered during a given period (numerator data) and reported target population data (denominator data). May be biased by inaccurate numerator and/or denominator data.

OFFICIAL coverage: Estimated coverage reported by national authorities that reflects their assessment of the most likely coverage based on any combination of administrative coverage, survey-based estimates or other data sources or adjustments. Approaches to determine OFFICIAL coverage may differ across countries.

SURVEY coverage: Based on estimated coverage from population-based household surveys among children aged 12-23 months or 24-35 months following a review of survey methods and results. Information is based on the combination of vaccination history from documented evidence or caregiver recall. Survey results are considered for the appropriate birth cohort based on the period of data collection.

ABBREVIATIONS

BCG: percentage of births who received one dose of Bacillus Calmette Guerin vaccine.

DTP1 / DTP3: percentage of surviving infants who received the 1st / 3rd dose, respectively, of diphtheria and tetanus toxoid with pertussis containing vaccine.

Pol3: percentage of surviving infants who received the 3rd dose of polio containing vaccine. May be either oral or inactivated polio vaccine.

IPV1: percentage of surviving infants who received at least one dose of inactivated polio vaccine. In countries utilizing an immunization schedule recommending either (i) a primary series of three doses of oral polio vaccine (OPV) plus at least one dose of IPV where OPV is included in routine immunization and/or campaign or (ii) a sequential schedule of IPV followed by OPV, WHO and UNICEF estimates for IPV1 reflect coverage with at least one routine dose of IPV among infants <1 year of age among countries. For countries utilizing IPV containing vaccine use only, i.e., no recommended dose of OPV, the WHO and UNICEF estimate for IPV1 corresponds to coverage for the 1st dose of IPV.

Production of IPV coverage estimates, which begins in 2015, results in no change of the estimated coverage levels for the 3rd dose of polio (Pol3). For countries recommending routine immunization with a primary series of three doses of IPV alone, WHO and UNICEF estimated Pol3 coverage is equivalent to estimated coverage with three doses of IPV. For countries with a sequential schedule, estimated Pol3 coverage is based on that for the 3rd dose of polio vaccine regardless of vaccine type.

MCV1: percentage of surviving infants who received the 1st dose of measles containing vaccine. In countries where the national schedule recommends the 1st dose of MCV at 12 months or later based on the epidemiology of disease in the country, coverage estimates reflect the percentage of children who received the 1st dose of MCV as recommended.

MCV2: percentage of children who received the 2nd dose of measles containing vaccine according to the nationally recommended schedule.

RCV1: percentage of surviving infants who received the 1st dose of rubella containing vaccine. Co verage estimates are based on WHO and UNICEF estimates of coverage for the dose of measles containing vaccine that corresponds to the first measles-rubella combination vaccine. Nationally reported coverage of RCV is not taken into consideration nor are the data represented in the accompanying graph and data table.

HepBB: percentage of births which received a dose of hepatitis B vaccine within 24 hours of delivery. Estimates of hepatitis B birth dose coverage are produced only for countries with a universal birth dose policy. Estimates are not produced for countries that recommend a birth dose to infants born to HepB virus-infected mothers only or where there is insufficient information to determine whether vaccination is within 24 hours of birth.

HepB3: percentage of surviving infants who received the 3rd dose of hepatitis B containing vaccine following the birth dose.

Hib3: percentage of surviving infants who received the 3rd dose of Haemophilus influenzae type b containing vaccine.

RotaC: percentage of surviving infants who received the final recommended dose of rotavirus vaccine, which can be either the 2nd or the 3rd dose depending on the vaccine.
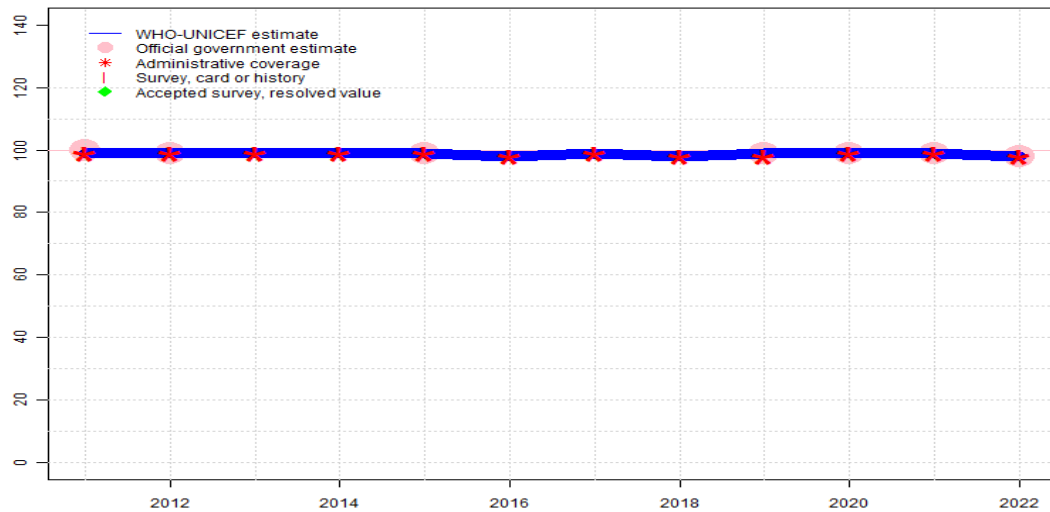
PcV3: percentage of surviving infants who received the 3rd dose of pneumococcal conjugate vaccine. In countries where the national schedule recommends two doses during infancy and a booster dose at 12 months or later based on the epidemiology of disease in the country, coverage estimates may reflect the percentage of surviving infants who received two doses of PcV prior to the 1st birthday.

YFV: percentage of surviving infants who received one dose of yellow fever vaccine in countries where YFV is part of the national immunization schedule for children or is recommended in at risk areas; coverage estimates are annualized for the entire cohort of surviving infants.

Malaysia - BCG

MYS - BCG

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	99	99	99	99	99	98	99	98	99	99	99	98
Estimate GoC	••	••	••	••	••	••	••	••	••	••	•	•
Official	100	99	NA	NA	99	NA	NA	NA	99	99	99	98
Administrative	99	99	99	99	99	98	99	98	98	99	99	98
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information
that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe
the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon
which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence
intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around
the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is
not a judgment of the quality of data reported by national authorities.

●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator
from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at
least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk
of being wrong.

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or
[S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.
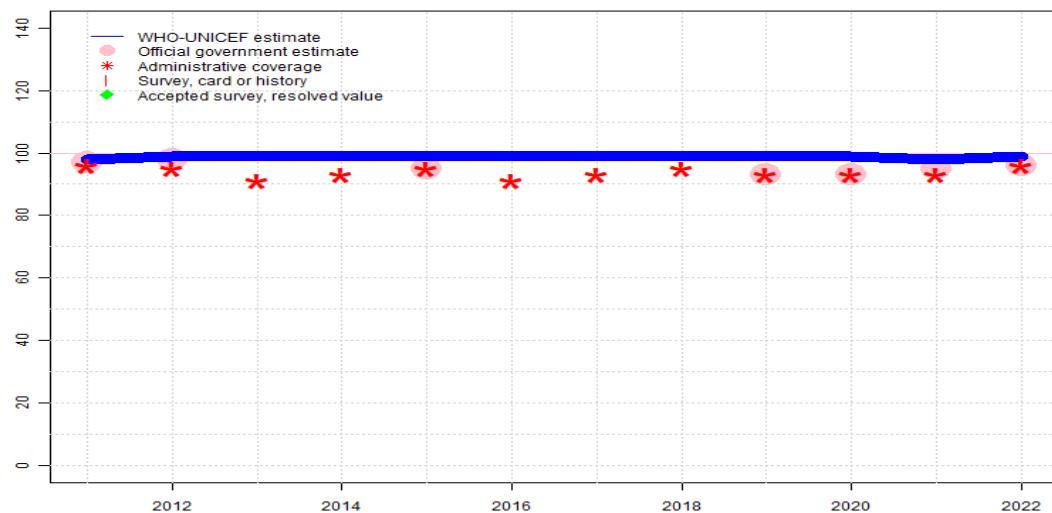
In all cases these estimates should be used with caution and should be assessed in light
of the objective for which they are being used.

Description:

2022: Estimate informed by reported data. No nationally representative household survey within
the last 5 years. WHO and UNICEF are aware of the 2022-23 National Health and Morbidity Survey and await the final report. Estimate challenged by: D-

2021: Estimate informed by reported data. Declines in reported number of doses administered
since 2019 are largely not reflected in reported coverage levels due in part to declines
in the reported target population. From 2019 to 2021, the reported target population
decreased 7 percent. Estimate challenged by: D-

2020: Estimate informed by reported data. GoC=R+ D+

2019: Estimate informed by reported data. GoC=R+ D+

2018: Estimate informed by reported administrative data. Estimate of 98 percent changed from
previous revision value of 99 percent. GoC=R+ D+

2017: Estimate informed by reported administrative data. Estimate of 99 percent changed from
previous revision value of 98 percent. GoC=R+ D+

2016: Estimate informed by reported administrative data. Estimate of 98 percent changed from
previous revision value of 99 percent. GoC=R+ D+

2015: Estimate informed by reported data. GoC=R+ D+

2014: Estimate informed by reported administrative data. Results from the National Health
and Morbidity Survey conducted in 2016 among children aged 12-23 months, reflecting
coverage for the 2014 birth cohort, support reported coverage. GoC=R+ D+

2013: Estimate informed by reported administrative data. GoC=R+ D+

2012: Estimate informed by reported data. GoC=R+ D+

2011: Estimate informed by reported data. GoC=R+ D+

Malaysia - DTP1

MYS - DTP1

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

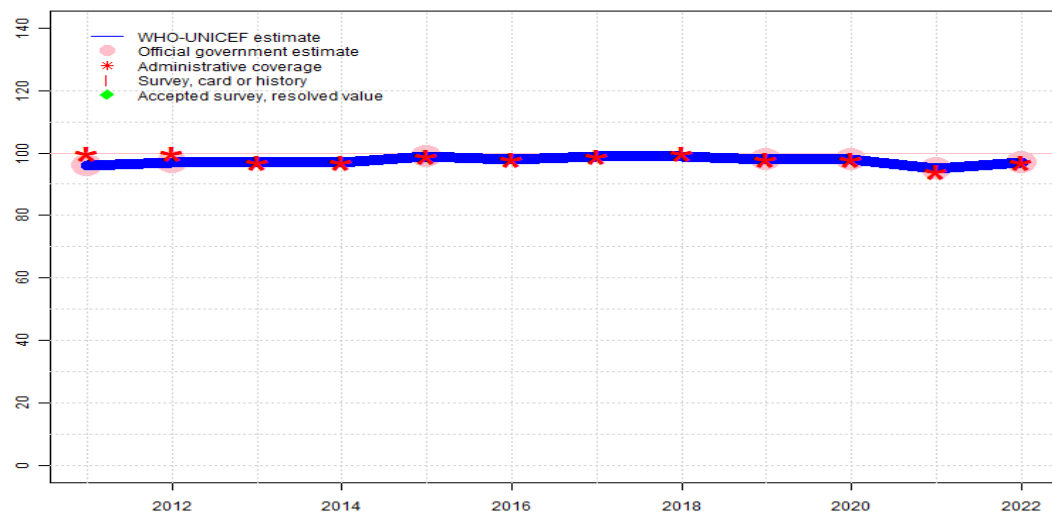|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	98	99	99	99	99	99	99	99	99	99	98	99
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	97	98	NA	NA	95	NA	NA	NA	93	93	95	96
Administrative	96	95	91	93	95	91	93	95	93	93	93	96
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

2022: DTP1 coverage estimated based on DTP3 coverage of 97. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of the 2022-23 National Health and Morbidity Survey and await the final report. Estimate challenged by: D-R-

2021: DTP1 coverage estimated based on DTP3 coverage of 95. Declines in reported number of doses administered since 2019 are largely not reflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. Estimate challenged by: D-R-

2020: DTP1 coverage estimated based on DTP3 coverage of 98. Estimate challenged by: R-

2019: DTP1 coverage estimated based on DTP3 coverage of 98. Estimate challenged by: R-

2018: DTP1 coverage estimated based on DTP3 coverage of 100. Estimate challenged by: R-

2017: DTP1 coverage estimated based on DTP3 coverage of 99. Estimate challenged by: R-

2016: DTP1 coverage estimated based on DTP3 coverage of 98. Estimate of 99 percent changed from previous revision value of 98 percent. Estimate challenged by: R-

2015: DTP1 coverage estimated based on DTP3 coverage of 99. Estimate challenged by: R-

2014: DTP1 coverage estimated based on DTP3 coverage of 97. Results from the National Health and Morbidity Survey conducted in 2016 among children aged 12-23 months, reflecting coverage for the 2014 birth cohort, support reported coverage. Estimate challenged by: R-

2013: DTP1 coverage estimated based on DTP3 coverage of 97. Estimate challenged by: R-

2012: DTP1 coverage estimated based on DTP3 coverage of 97. Estimate challenged by: R-

2011: DTP1 coverage estimated based on DTP3 coverage of 96. Estimate challenged by: R-

Malaysia - DTP3

MYS - DTP3

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

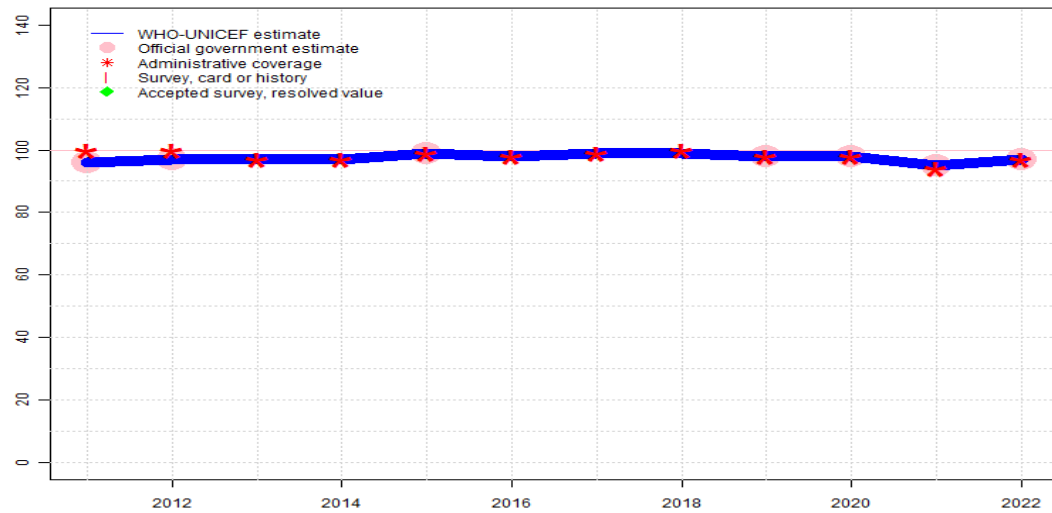|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	96	97	97	97	99	98	99	99	98	98	95	97
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	•
Official	96	97	NA	NA	99	NA	NA	NA	98	98	95	97
Administrative	100	100	97	97	99	98	99	100	98	98	94	97
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

••• Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

•• Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

• There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

2022: Estimate informed by reported data. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of the 2022-23 National Health and Morbidity Survey and await the final report. Estimate challenged by: D-

2021: Estimate informed by reported data. Declines in reported number of doses administered since 2019 are largely not reflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. GoC=R+ D+

2020: Estimate informed by reported data. GoC=R+ D+

2019: Estimate informed by reported data. GoC=R+ D+

2018: Estimate informed by reported administrative data. GoC=R+ D+

2017: Estimate informed by reported administrative data. GoC=R+ D+

2016: Estimate informed by reported administrative data. Estimate of 98 percent changed from previous revision value of 95 percent. GoC=R+ D+

2015: Estimate informed by reported data. GoC=R+ D+

2014: Estimate informed by reported administrative data. Results from the National Health and Morbidity Survey conducted in 2016 among children aged 12-23 months, reflecting coverage for the 2014 birth cohort, support reported coverage. GoC=R+ D+

2013: Estimate informed by reported administrative data. GoC=R+ D+

2012: Estimate informed by reported data. GoC=R+ D+

2011: Estimate informed by reported data. GoC=R+ D+

MYS - Pol3

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

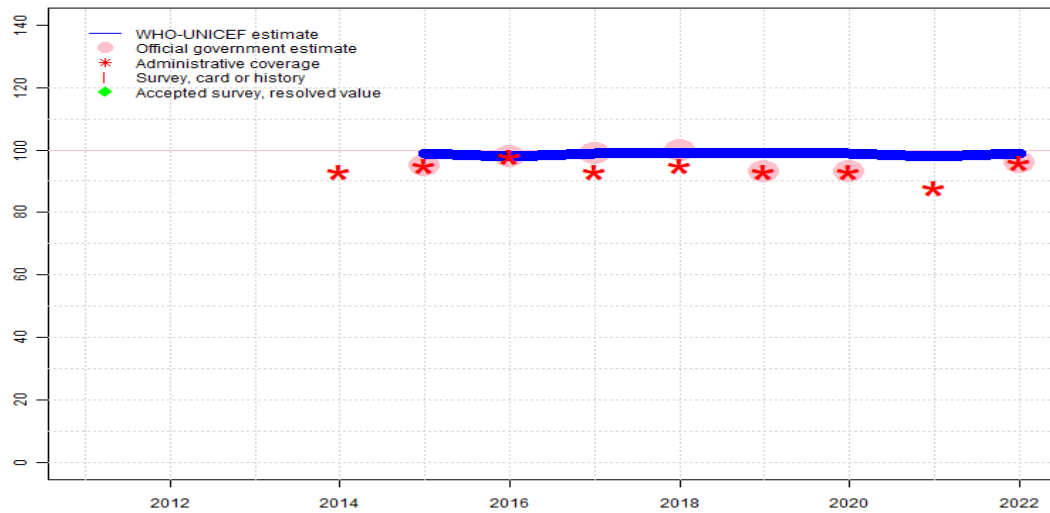|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	96	97	97	97	99	98	99	99	98	98	95	97
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●
Official	96	97	NA	NA	99	NA	NA	NA	98	98	95	97
Administrative	100	100	97	97	99	98	99	100	98	98	94	97
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

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● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

2022: Estimate informed by reported data. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of the 2022-23 National Health and Morbidity Survey and await the final report. Estimate challenged by: D-

2021: Estimate informed by reported data. Declines in reported number of doses administered since 2019 are largely not reflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. GoC=R+ D+

2020: Estimate informed by reported data. GoC=R+ D+

2019: Estimate informed by reported data. GoC=R+ D+

2018: Estimate informed by reported administrative data. GoC=R+ D+

2017: Estimate informed by reported administrative data. GoC=R+ D+

2016: Estimate informed by reported administrative data. GoC=R+ D+

2015: Estimate informed by reported data. GoC=R+ D+

2014: Estimate informed by reported administrative data. Results from the National Health and Morbidity Survey conducted in 2016 among children aged 12-23 months, reflecting coverage for the 2014 birth cohort, support reported coverage. GoC=R+ D+

2013: Estimate informed by reported administrative data. GoC=R+ D+

2012: Estimate informed by reported data. GoC=R+ D+

2011: Estimate informed by reported data. GoC=R+ D+

MYS - IPV1

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

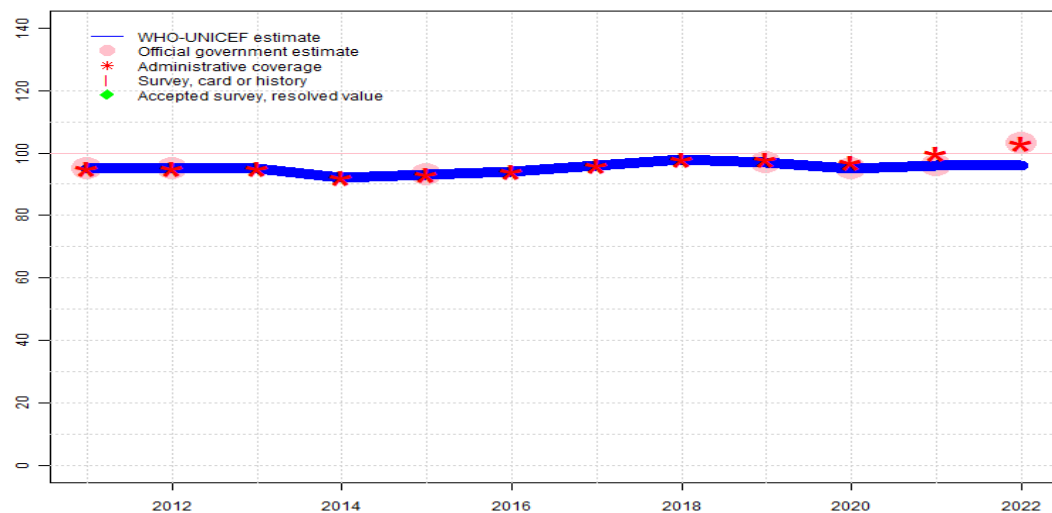|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	NA	NA	NA	99	98	99	99	99	99	98	99
Estimate GoC	NA	NA	NA	NA	●	●	●	●	●	●	●	●
Official	NA	NA	NA	NA	95	98	99	100	93	93	NA	96
Administrative	NA	NA	NA	93	95	98	93	95	93	93	88	96
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

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● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

Estimates for a dose of inactivated polio vaccine (IPV) begin in 2015 following the Global Polio Eradication Initiative's Polio Eradication and Endgame Strategic Plan: 2013-2018 which recommended at least one full dose or two fractional doses of IPV into routine immunization schedules as a strategy to mitigate the potential consequences should any re-emergence of type 2 poliovirus occur following the planned withdrawal of Sabin type 2 strains from oral polio vaccine (OPV).

2022: Estimate informed by estimated DTP1 coverage. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of the 2022-23 National Health and Morbidity Survey and await the final report. Estimate challenged by: D-R-

2021: Estimate informed by estimated DTP1 coverage. Declines in reported number of doses administered since 2019 are largely not reflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. Estimate of 98 percent changed from previous revision value of 88 percent. Estimate challenged by: D-R-

2020: Estimate informed by estimated DTP1 coverage. Estimate of 99 percent changed from previous revision value of 93 percent. Estimate challenged by: R-

2019: Estimate is based on estimated DTP1 level. Estimate challenged by: R-

2018: Estimate is based on estimated DTP1 level. Estimate challenged by: R-

2017: Estimate is based on estimated DTP1 level. Estimate challenged by: R-

2016: Estimate is based on estimated DTP1 level. Estimate challenged by: R-

2015: Estimate is based on estimated DTP1 level. Inactivated polio vaccine as part of a combination DTP-IPV-Hib vaccine in June 2009 and was available nationally during 2010. Estimate challenged by: R-

MYS - MCV1

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	95	95	95	92	93	94	96	98	97	95	96	96
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	95	95	NA	NA	93	NA	NA	NA	97	95	96	103
Administrative	95	95	95	92	93	94	96	98	98	97	100	103
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.
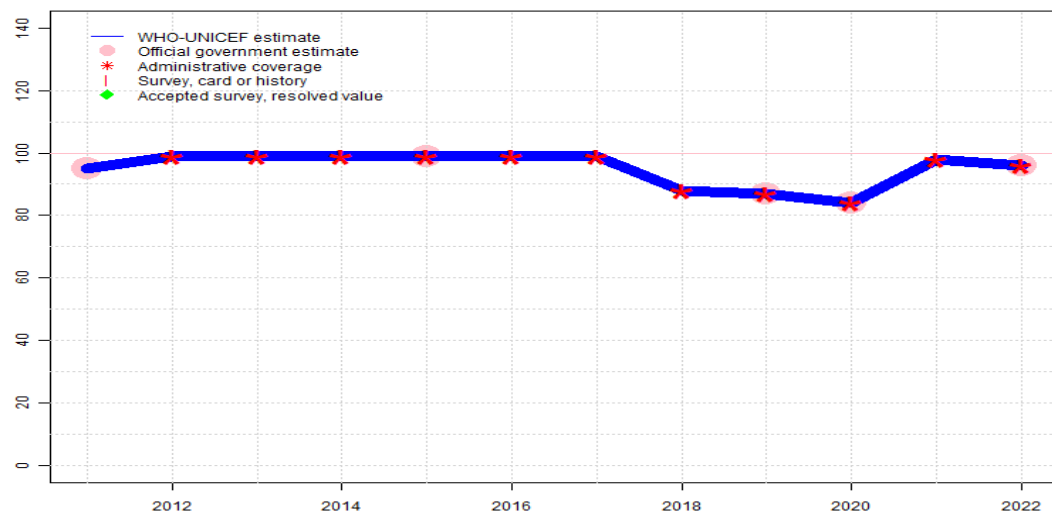
●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

2022: Estimate based on extrapolation from data reported by national government. Reported data excluded because 103 percent greater than 100 percent. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of the 2022-23 National Health and Morbidity Survey and await the final report. GoC=R+ D+

2021: Estimate informed by reported data. Declines in reported number of doses administered since 2019 are largely not reflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. GoC=R+ D+

2020: Estimate informed by reported data. GoC=R+ D+

2019: Estimate informed by reported data. GoC=R+ D+

2018: Estimate informed by reported administrative data. Estimate of 98 percent changed from previous revision value of 96 percent. GoC=R+ D+

2017: Estimate informed by reported administrative data. Estimate of 96 percent changed from previous revision value of 93 percent. GoC=R+ D+

2016: Estimate informed by reported administrative data. Estimate of 94 percent changed from previous revision value of 93 percent. GoC=R+ D+

2015: Estimate informed by reported data. GoC=R+ D+

2014: Estimate informed by reported administrative data. Results from the National Health and Morbidity Survey conducted in 2016 among children aged 12-23 months, reflecting coverage for the 2014 birth cohort, support reported coverage. Estimate of 92 percent changed from previous revision value of 94 percent. GoC=R+ D+

2013: Estimate informed by reported administrative data. GoC=R+ D+

2012: Estimate informed by reported data. GoC=R+ D+

2011: Estimate informed by reported data. GoC=R+ D+

Malaysia - MCV2

MYS - MCV2

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

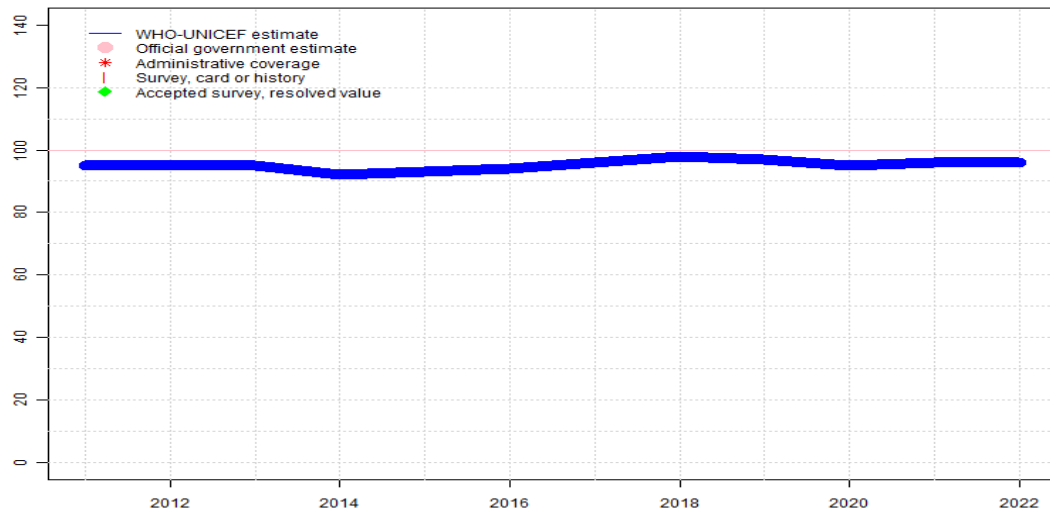|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	95	99	99	99	99	99	99	88	87	84	98	96
Estimate GoC	●●	●●	●	●	●	●●	●	●●	●●	●●	●●	●●
Official	95	NA	NA	NA	99	NA	NA	NA	87	84	NA	96
Administrative	NA	99	99	99	99	99	99	88	87	84	98	96
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

Coverage estimates for the second dose of measles containing vaccine are for children by the nationally recommended age.

2022: Estimate informed by reported data. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of the 2022-23 National Health and Morbidity Survey and await the final report. GoC=R+ D+

2021: Estimate informed by reported administrative data. Declines in reported number of doses administered since 2019 are largely not reflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. Estimate of 98 percent changed from previous revision value of 84 percent. GoC=R+ D+

2020: Estimate informed by reported data. GoC=R+ D+

2019: Estimate informed by reported data. GoC=R+ D+

2018: Estimate informed by reported administrative data. Reported decline in administrative coverage appears to be due in part to a change in the recommended age for administration and an increase in the reported target population. Number of children vaccinated increased 8 percent between 2017 and 2018. GoC=R+ D+

2017: Estimate informed by reported administrative data. Estimate challenged by: D-

2016: Estimate informed by reported administrative data. GoC=R+ D+

2015: Estimate informed by reported data. Estimate challenged by: D-

2014: Estimate informed by reported administrative data. Estimate challenged by: D-

2013: Estimate informed by reported administrative data. Estimate challenged by: D-

2012: Estimate informed by reported administrative data. GoC=R+ D+

2011: Estimate informed by reported data. GoC=R+

Malaysia - RCV1

MYS - RCV1

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	95	95	95	92	93	94	96	98	97	95	96	96
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information
that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe
the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon
which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence
intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around
the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is
not a judgment of the quality of data reported by national authorities.

●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator
from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at
least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk
of being wrong.

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or
[S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light
of the objective for which they are being used.

Description:

For this revision, coverage estimates for the first dose of rubella containing vaccine are based
on WHO and UNICEF estimates of coverage of measles containing vaccine. Nationally
reported coverage of rubella containing vaccine is not taken into consideration nor are
they represented in the the accompanying graph and data table.

2022: Estimate based on estimated MCV1. No nationally representative household survey within
the last 5 years. WHO and UNICEF are aware of the 2022-23 National Health and Morbidity Survey and await the final report. GoC=R+ D+

2021: Estimate based on estimated MCV1. Declines in reported number of doses administered
since 2019 are largely not reflected in reported coverage levels due in part to declines
in the reported target population. From 2019 to 2021, the reported target population
decreased 7 percent. GoC=R+ D+

2020: Estimate based on estimated MCV1. GoC=R+ D+

2019: Estimate based on estimated MCV1. GoC=R+ D+

2018: Estimate based on estimated MCV1. Estimate of 98 percent changed from previous revision value of 96 percent. GoC=R+ D+

2017: Estimate based on estimated MCV1. Estimate of 96 percent changed from previous revision value of 93 percent. GoC=R+ D+

2016: Estimate based on estimated MCV1. Estimate of 94 percent changed from previous revision value of 93 percent. GoC=R+ D+

2015: Estimate based on estimated MCV1. GoC=R+ D+

2014: Estimate based on estimated MCV1. Estimate of 92 percent changed from previous revision value of 94 percent. GoC=R+ D+
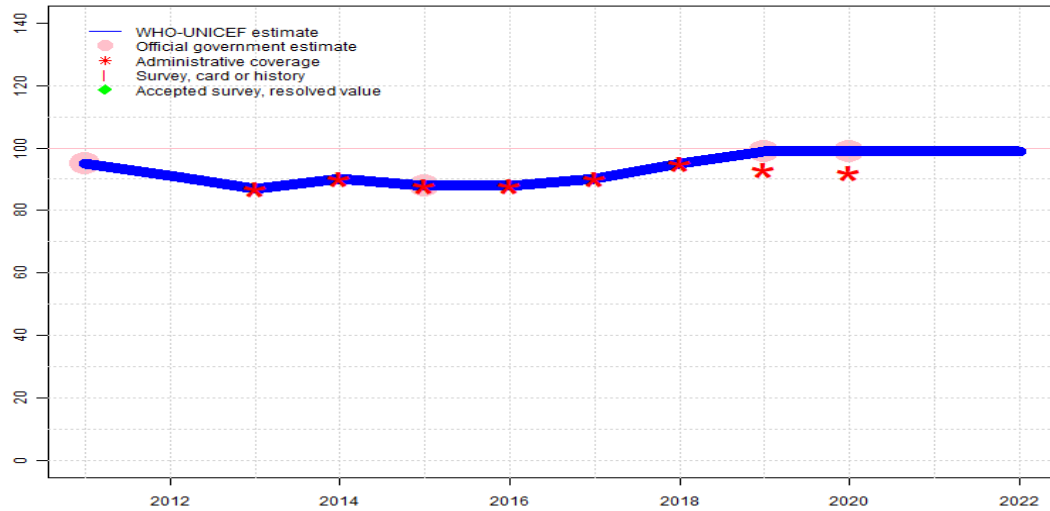
2013: Estimate based on estimated MCV1. GoC=R+ D+

2012: Estimate based on estimated MCV1. GoC=R+ D+

2011: Estimate based on estimated MCV1. GoC=R+ D+

Malaysia - HepBB

MYS - HepBB

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

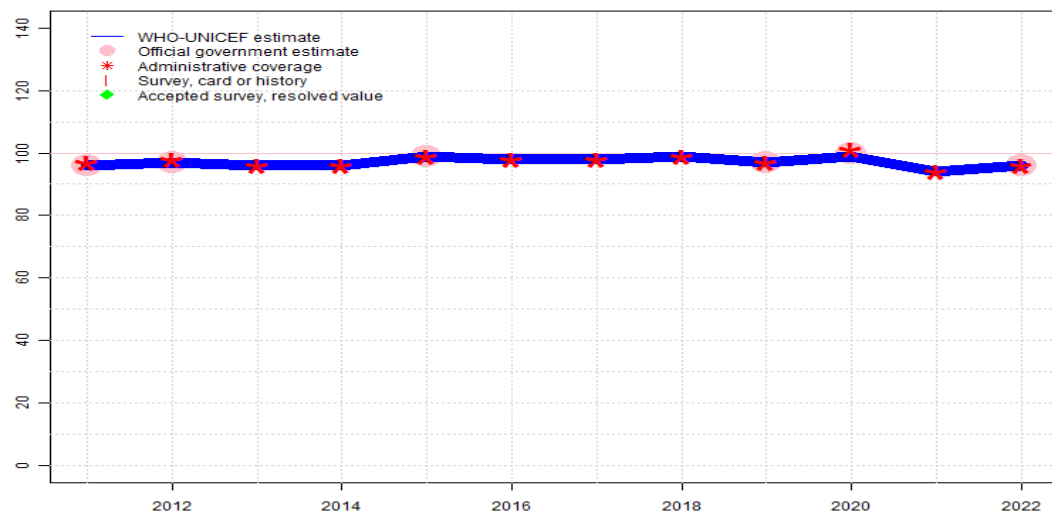|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	95	91	87	90	88	88	90	95	99	99	99	99
Estimate GoC	••	•	••	••	••	••	••	••	••	•	•	•
Official	95	NA	NA	NA	88	NA	NA	NA	99	99	NA	NA
Administrative	NA	NA	87	90	88	88	90	95	93	92	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information
that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe
the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon
which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence
intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around
the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is
not a judgment of the quality of data reported by national authorities.

••• Estimate is supported by reported data [R+], coverage recalculated with an independent denominator
from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at
least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk
of being wrong.

•• Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or
[S-], challenges the estimate.

• There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light
of the objective for which they are being used.

Description:

2022: Estimate informed by extrapolation from reported data. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of the 2022-23 National Health and Morbidity Survey and await the final report. GoC=No accepted empirical data

2021: Estimate informed by extrapolation from reported data. Declines in reported number of doses administered since 2019 are largely not reflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. GoC=No accepted empirical data

2020: Estimate informed by reported data. Estimate challenged by: D-

2019: Estimate informed by reported data. GoC=R+ D+

2018: Estimate informed by reported administrative data. GoC=R+ D+

2017: Estimate informed by reported administrative data. GoC=R+ D+

2016: Estimate informed by reported administrative data. GoC=R+ D+

2015: Estimate informed by reported data. GoC=R+ D+

2014: Estimate informed by reported administrative data. GoC=R+ D+

2013: Estimate informed by reported administrative data. GoC=R+ D+

2012: Estimate informed by interpolation between reported data. GoC=No accepted empirical data

2011: Estimate informed by reported data. GoC=R+

Malaysia - HepB3

MYS - HepB3

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

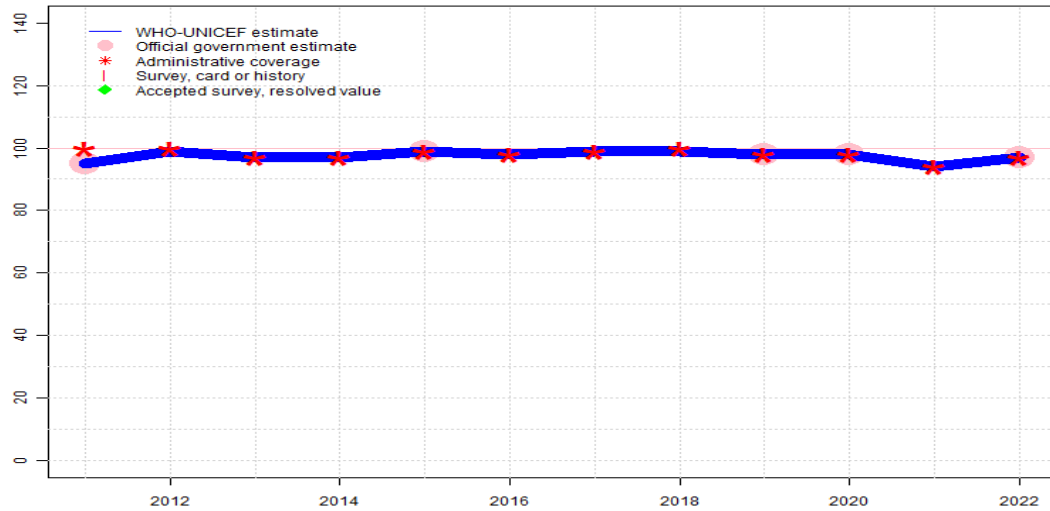|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	96	97	96	96	99	98	98	99	97	99	94	96
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	•
Official	96	97	NA	NA	99	NA	NA	NA	97	100	NA	96
Administrative	97	98	96	96	99	98	98	99	97	101	94	96
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

••• Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

•• Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

• There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

2022: Estimate informed by reported data. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of the 2022-23 National Health and Morbidity Survey and await the final report. Estimate challenged by: D-

2021: Estimate informed by reported administrative data. Declines in reported number of doses administered since 2019 are largely not reflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. GoC=R+ D+

2020: Estimate informed by reported data. GoC=R+ D+

2019: Estimate informed by reported data. GoC=R+ D+

2018: Estimate informed by reported administrative data. GoC=R+ D+

2017: Estimate informed by reported administrative data. GoC=R+ D+

2016: Estimate informed by reported administrative data. GoC=R+ D+

2015: Estimate informed by reported data. GoC=R+ D+

2014: Estimate informed by reported administrative data. Results from the National Health and Morbidity Survey conducted in 2016 among children aged 12-23 months, reflecting coverage for the 2014 birth cohort, support reported coverage. GoC=R+ D+

2013: Estimate informed by reported administrative data. GoC=R+ D+

2012: Estimate informed by reported data. GoC=R+ D+

2011: Estimate informed by reported data. GoC=R+ D+

Malaysia - Hib3

MYS - Hib3

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	95	99	97	97	99	98	99	99	98	98	94	97
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	•
Official	95	NA	NA	NA	99	NA	NA	NA	98	98	NA	97
Administrative	100	100	97	97	99	98	99	100	98	98	94	97
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

••• Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

•• Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

• There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

2022: Estimate informed by reported data. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of the 2022-23 National Health and Morbidity Survey and await the final report. Estimate challenged by: D-

2021: Estimate informed by reported administrative data. Declines in reported number of doses administered since 2019 are largely not reflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. GoC=R+ D+

2020: Estimate informed by reported data. GoC=R+ D+

2019: Estimate informed by reported data. GoC=R+ D+

2018: Estimate informed by reported administrative data. GoC=R+ D+

2017: Estimate informed by reported administrative data. GoC=R+ D+

2016: Estimate informed by reported administrative data. Estimate of 98 percent changed from previous revision value of 95 percent. GoC=R+ D+

2015: Estimate informed by reported data. GoC=R+ D+

2014: Estimate informed by reported administrative data. Results from the National Health and Morbidity Survey conducted in 2016 among children aged 12-23 months, reflecting coverage for the 2014 birth cohort, support reported coverage. GoC=R+ D+

2013: Estimate informed by reported administrative data. GoC=R+ D+

2012: Estimate informed by reported administrative data. GoC=R+ D+
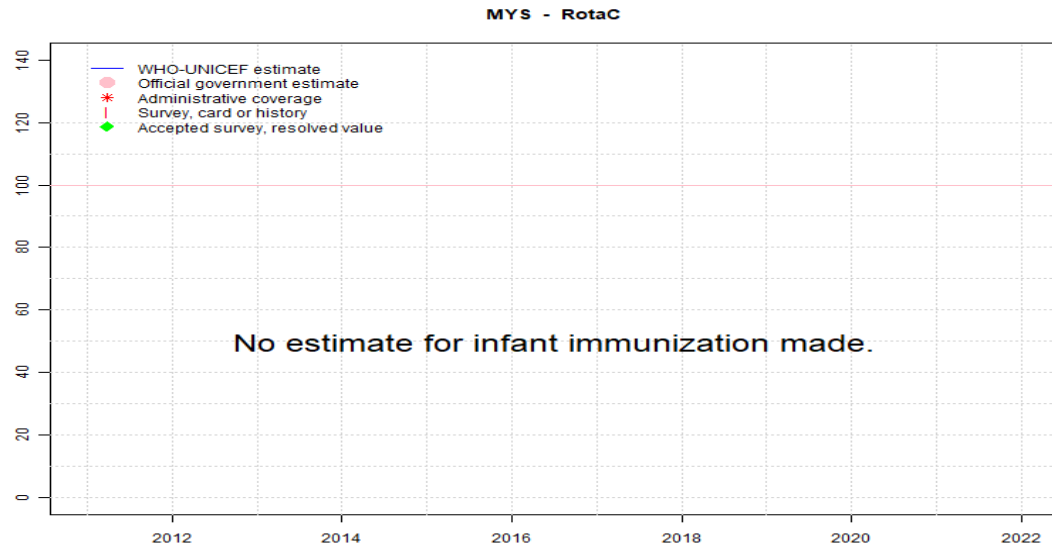
2011: Estimate informed by reported data. GoC=R+ D+

Malaysia - RotaC

MYS - RotaC

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

No estimate for infant immunization made.

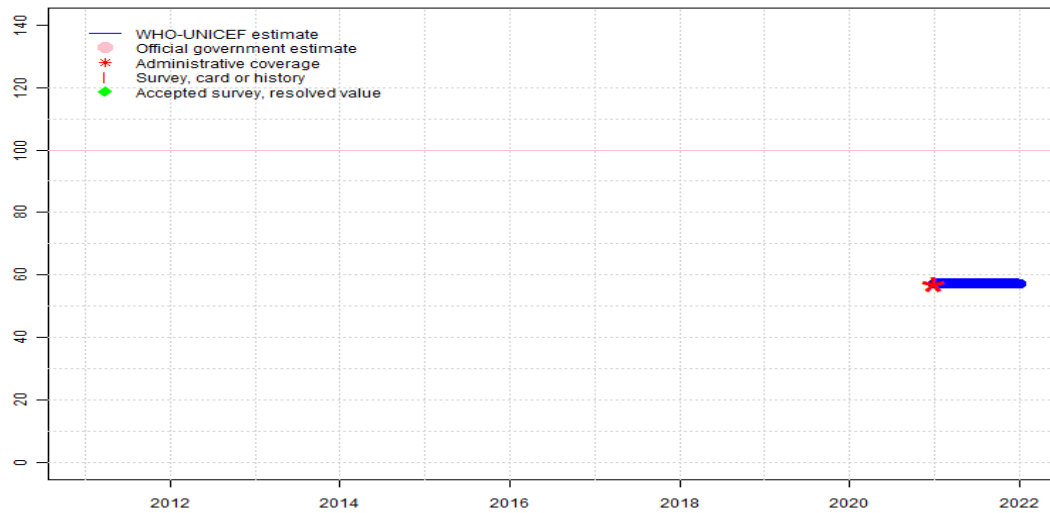|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information
that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe
the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon
which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence
intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around
the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is
not a judgment of the quality of data reported by national authorities.

●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator
from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at
least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk
of being wrong.

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or
[S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light
of the objective for which they are being used.

Malaysia - PcV3

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

Description:

2022: Estimate informed by extrapolation from reported data. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of the 2022-23 National Health and Morbidity Survey and await the final report. GoC=No accepted empirical data

2021: Estimate informed by reported administrative data. Declines in reported number of doses administered since 2019 are largely not reflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. Vaccine universally introduced for infants in December 2020. Reporting started in 2021. GoC=R+ D+

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	57	57
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	●●	●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	57	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

NOTE: A survey to measure vaccination coverage for infants (i.e., children aged 0 to 11 months) will sample children aged 12 to 23 months at the time of survey to capture the youngest annual cohort of children who should have completed the vaccination schedule. Because WUENIC are for infant vaccinations, survey data in this report are presented to reflect the birth year of the youngest survey cohort. For example, results for a survey conducted during December 2020 among children aged 12 to 23 months at the time of the survey reflect the immunization experience of children born in 2019. Depending on the timing of survey field work, results may reflect the immunization experience of children born and vaccinated 1 or 2 years prior to the survey field work.

2014 Malaysia National Health and Morbidity Survey 2016

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	92.3	12-23 m	10138	86
DTP1	Card	89.8	12-23 m	10139	86
DTP1	History	9.5	12-23 m	10139	86
DTP3	Card	89	12-23 m	10139	86
DTP3	History	9.5	12-23 m	10139	86
HepB1	Card	92.2	12-23 m	10136	86
HepB1	History	7.8	12-23 m	10136	86
HepB3	Card	88.4	12-23 m	10136	86
HepB3	History	9.9	12-23 m	10136	86
Hib1	Card	89.8	12-23 m	10139	86
Hib1	History	9.5	12-23 m	10139	86
Hib3	Card	89	12-23 m	10139	86
Hib3	History	9.5	12-23 m	10139	86
IPV1	Card	89.8	12-23 m	10139	86
IPV1	History	9.5	12-23 m	10139	86
MCV1	Card	87.3	12-23 m	10139	86
MCV1	History	9.3	12-23 m	10139	86
Pol1	Card	89.8	12-23 m	10139	86
Pol1	History	9.5	12-23 m	10139	86
Pol3	Card	89	12-23 m	10139	86
Pol3	History	9.5	12-23 m	10139	86

Further information and estimates for previous years are available at:
https://data.unicef.org/topic/child-health/immunization/
https://immunizationdata.who.int/listing.html